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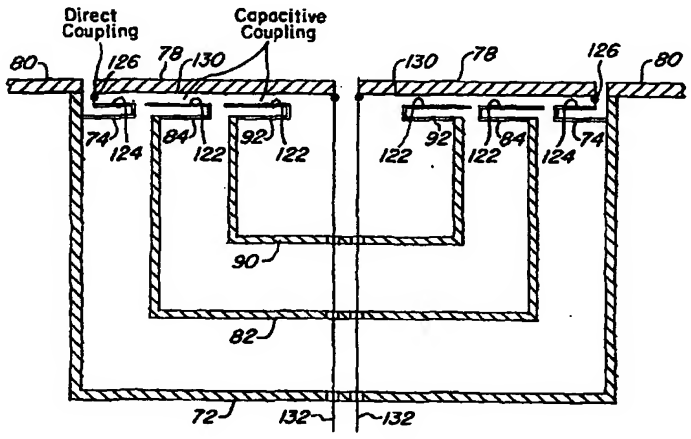
(54) Title: CAVITY EMBEDDED ANTENNA



(57) Abstract: A nested cavity embedded loop mode antenna is provided with an ultra wide band response by nesting individual embedded cavity meander line loaded antenna modules, with the meander lines (74,78,92) coupled to a ground plane plate either capacitively or directly so as to provide as much as a 27:1 ratio of high frequency to low frequency cutoff. The nested meander line structure is exceptionally compact and eliminates the problem of a null in the antenna radiation pattern perpendicular to the face of the antenna, thus to provide a loop type antenna pattern at all frequencies across which the antenna is to be operated. The use of the nested meander line configuration provides a flush mount for the antenna having a footprint associated with the larger of the meander line cavities (72,82,90) and thus the lowest frequency of operation, the nesting precluding the necessity of providing separate side-by-side meander line loaded antennas which would increase the real estate required. Additionally, a shunted slotline embodiment of the cavity-embedded antenna substitutes shunted slots for meander lines to provide for a low-cost wide bandwidth cavity-embedded antenna.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/10008

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : H01Q 1/36
US CL : 343,895,700ms,742,789,821,866
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 343,895,700ms,742,789,821,866

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
East: meanderline, module, ground plane, shunting element, slotted plate, cavities, wideband antenna, feed.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,198,826 A (ITO) 30 March 1993 (30.03.1993), figure 1, feed 8a, feed 8b, loop antennas 2 and 3, figure 6, element 15 and 15', column 4, lines 1-8.	1-3, 12, 13-16
A	US 5,198,826 A (ITO) 30 March 1993 (30.03.1993), figure 1, feed 8a, feed 8b, loop antennas 2 and 3, figure 6, element 15 and 15', column 4, lines 1-8.	4-11, 17-20, 21-37

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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